

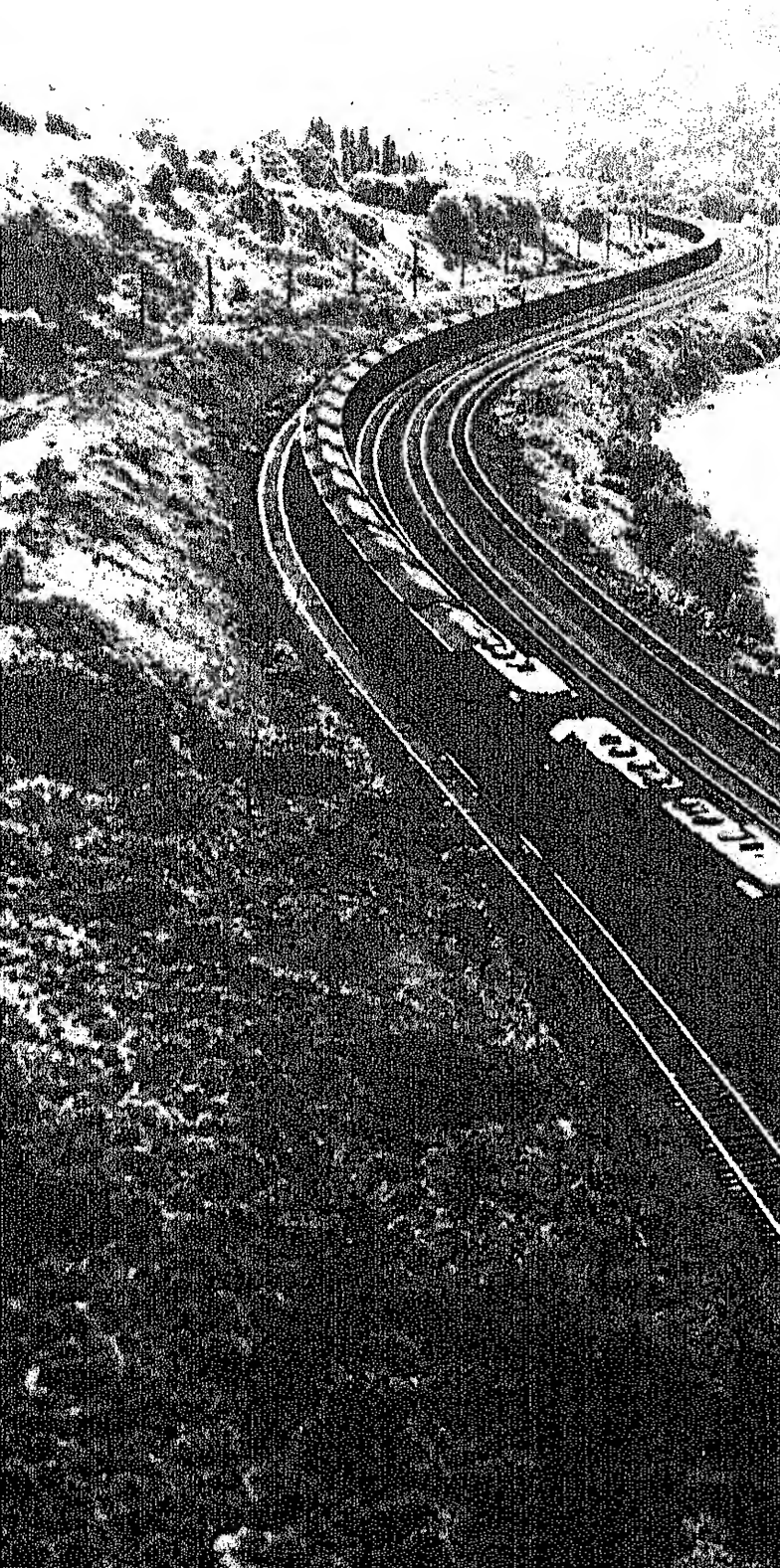




Energy  
Information  
Administration

# Weekly Coal Production

Production for Week Ended:  
August 17, 1991



See State  
Coal Profile

## Preface

The *Weekly Coal Production (WCP)* provides weekly estimates of U.S. coal production by State. Supplementary data are usually published monthly in two supplements: the Coal Exports and Imports Supplement and the Domestic Market Supplement. The Coal Exports and Imports Supplement contains detailed monthly data on U.S. coal and coke exports and imports. The Domestic Market Supplement contains detailed monthly electric utility coal statistics, by Census Division and State, for generation, consumption, stocks, receipts, sulfur content, prices, and the origin and destination of coal shipments. This supplement also contains summary-level, monthly data for all coal-consuming sectors on a quarterly basis.

Preliminary coal production data are published quarterly, based on production data collected using Form EIA-6, "Coal Distribution Report." Based on 1988 and 1989 data, the coal production estimation error for a quarter at the national level (i.e., the difference between the sum of the weekly estimates for a quarter and the quarterly EIA-6 preliminary data) ranges from 1 percent to 4 percent for 1988 and 1 percent to 2 percent for 1989.

Final coal production data are published annually, based on the EIA-7A coal production survey. Based

on 1988 and 1989 data, the revision error for a quarter at the national level (i.e., the difference between the EIA-6 preliminary data and the EIA-7A final data) ranges from 0.02 percent to 0.08 percent for 1988 and 0.09 percent to 0.14 percent for 1989.

This publication is prepared by the Coal Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration (EIA) to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (P.L. 93-275) as amended. *Weekly Coal Production* is intended for use by industry, press, State and local governments, and consumers. Other publications that may be of interest are the quarterly *Coal Distribution*, the *Quarterly Coal Report*, *Coal Production 1989*, and *Coal Data: A Reference*.

This publication was prepared by Wayne M. Watson and Michelle D. Bowles under the direction of Mary K. Paull and Noel C. Balthasar, Chief, Data Systems Branch. Specific information about the *State Coal Profile: Texas* may be obtained from Eugene R. Slatick at 202/254-5384. Questions on energy statistics should be directed to the National Energy Information Center (NEIC) at 202/586-8800.

### Photo Credit:

Northwestern Resources  
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State Coal Profile

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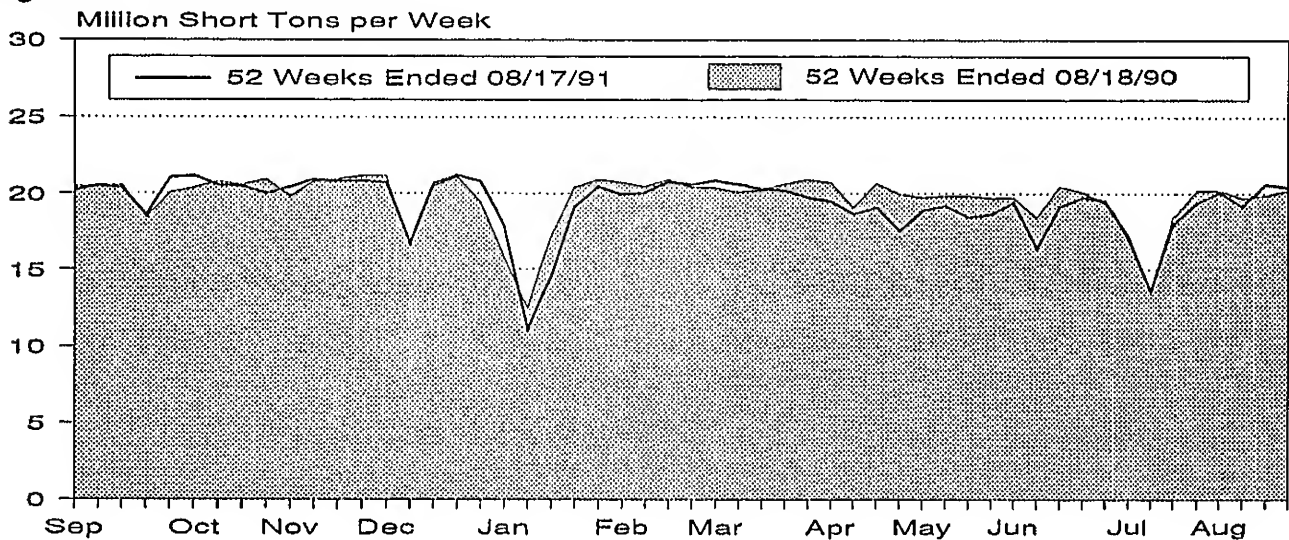
This report was prepared by the Energy Information Administration, the independent statistical and analytical agency within the Department of Energy. The information contained herein should not be construed as advocating or reflecting any policy of the Department of Energy or any other organization.

## Summary

U.S. coal production in the week ended August 17, 1991, as estimated by the Energy Information Administration, totaled 20 million short tons. This was about the same as in the previous week, and in

the comparable week in 1990. Production east of the Mississippi River totaled 13 million short tons, and production west of the Mississippi River totaled 8 million short tons.

**Figure 1. Coal Production**



**Table 1. Coal Production**

	Week Ended			52 Weeks Ended		
Production and Carloadings	08/17/91	08/10/91	08/18/90	08/17/91	08/18/90	Percent Change
Production (Thousand Short Tons)						
Bituminous Coal <sup>1</sup> and Lignite . . .	20,388	20,583	20,156	1,002,940	1,019,857	-1.7
Pennsylvania Anthracite . . . . .	55	55	59	2,840	3,135	-9.4
U.S. Total . . . . .	20,443	20,638	20,214	1,005,780	1,022,992	-1.7
Railroad Cars Loaded . . . . .	133,401	134,533	132,319	6,516,021	6,626,624	

<sup>1</sup>Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

**Table 2. Coal Production by State**  
(Thousand Short Tons)

Region and State	Week Ended		
	08/17/91	08/10/91	08/18/90
<b>Bituminous Coal<sup>1</sup> and Lignite</b>			
East of the Mississippi . . . . .	12,604	12,011	12,284
Alabama . . . . .	565	563	539
Illinois . . . . .	1,167	1,174	1,130
Indiana . . . . .	744	699	722
Kentucky . . . . .	3,504	3,119	3,449
Kentucky, Eastern . . . . .	2,617	2,425	2,538
Kentucky, Western . . . . .	887	694	911
Maryland . . . . .	75	66	69
Ohio . . . . .	707	688	667
Pennsylvania Bituminous . . . . .	1,426	1,339	1,299
Tennessee . . . . .	114	126	123
Virginia . . . . .	908	986	952
West Virginia . . . . .	3,394	3,251	3,334
West of the Mississippi . . . . .	7,784	8,572	7,872
Alaska . . . . .	28	28	27
Arizona . . . . .	231	233	226
Arkansas . . . . .	1	1	*
Colorado . . . . .	372	428	397
Iowa . . . . .	7	7	8
Kansas . . . . .	15	15	14
Louisiana . . . . .	65	54	77
Missouri . . . . .	48	49	46
Montana . . . . .	715	824	650
New Mexico . . . . .	485	490	431
North Dakota . . . . .	550	633	538
Oklahoma . . . . .	33	35	36
Texas . . . . .	1,244	1,256	1,161
Utah . . . . .	420	475	481
Washington . . . . .	89	90	102
Wyoming . . . . .	3,481	3,952	3,676
Bituminous Coal <sup>1</sup> and Lignite Total .	20,388	20,583	20,156
Pennsylvania Anthracite . . . . .	55	55	59
U.S. Total . . . . .	20,443	20,638	20,214

<sup>1</sup>Includes subbituminous coal.

\*Less than 0.5 thousand short tons.

Notes: All data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

# State Coal Profile: Texas

## Total Area of State:

267,338 square miles

## Area Underlain by Coal:

16,100 square miles

## Demonstrated Reserve Base of Coal: (January 1, 1990)

13 billion short tons  
(3 percent of U.S. total)

## First Year of Documented Coal Production:

1850 (100 short tons)

## Peak Year of Coal Production:

1989 (54 million short tons)

## 1989 Coal Production:

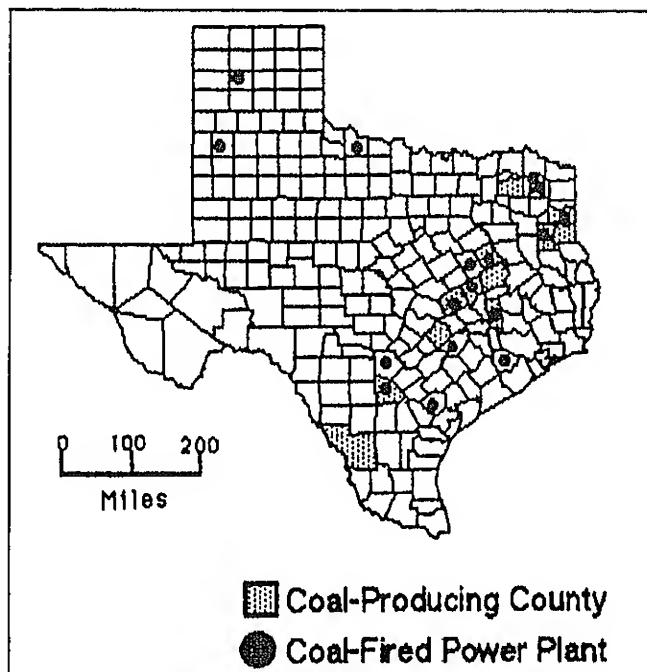
54 million short tons  
(5 percent of U.S. total)

## 1989 f.o.b. Mine Price:

\$10.91 per short ton  
(U.S. average = \$21.82)

## 1989 Coal Consumption:

91 million short tons  
(10 percent of U.S. total)



	<u>Number</u>	<u>Percentage of U.S. Total</u>
Number of Mines (1989) .....	15	<1
Underground .....	0	--
Surface .....	15	<1
Number of Miners (1989) (at mines producing more than 10,000 short tons) .....	2,109	2
Underground .....	0	--
Surface .....	2,109	4
Average Quality of Utility Coal Receipts (1989)	<u>Texas</u>	<u>U.S. Average</u>
Heat Content (million Btu per short ton) .....	14.6	20.9
Sulfur Content (percent by weight) .....	0.7	1.3
Ash Content (percent by weight) .....	11.8	9.9

Coal is one of four energy minerals produced in Texas, a major energy-producing State. The 1989 coal output of 54 million short tons, virtually all lignite, ranked Texas 6th among the 27 coal-producing States and first among lignite producers. The State also had the distinction of leading the Nation in the production of crude oil, natural gas, and uranium. Although greatly overshadowed by the value of crude oil and natural gas produced, the value of the 1989 coal output was \$588 million.

The lignite deposits in Texas are chiefly in the eastern part of the State. They occur in northeasterly trending belts that outline the margin of a basin formed in the geologic past by an inland extension of the Gulf of Mexico. The largest commercial deposits are in the Wilcox Formation. The beds mined range from 3 feet to 10 feet in thickness, although in some places two or more beds merge to form a single bed over 20 feet thick. As mined, the lignite generally has a heat content averaging about 12 million Btu per short ton, a sulfur content of about 1 percent (by weight), an ash content averaging about 17 percent, and a moisture content ranging from 15 to 35 percent. Bituminous coal is found in the north-central, southern, and southwestern parts of Texas, typically in beds 3 feet or less in thickness. Currently, the only bituminous coal produced is channel coal from Webb County, near the Mexican border. Channel coal is a resinous, relatively nonweathering variety of bituminous coal. The channel coal produced has an average heat value of about 25 million Btu per short ton, a sulfur content greater than 1 percent, an ash content of about 15 percent, and a low moisture content averaging less than 4 percent.

Lignite deposits in Texas were first reported in 1818. Bituminous coal was discovered in the State by the mid 1800's. The early coal industry in Texas produced lignite for local domestic heating and steam generation at cotton gins and other industrial plants. Bituminous coal was produced chiefly for railroad fuel. Total annual coal production rose above 1 million short tons at the turn of the century and reached more than 2 million short tons before 1920. Subsequently, annual coal production declined, as markets were lost to oil and gas produced from numerous fields discovered in the State. Bituminous coal production virtually ceased by 1944, but lignite production continued on a small scale due to the establishment of several industrial markets near lignite deposits. Since 1922, lignite has been used to manufacture activated carbon at a plant in Marshall. In 1926, the Texas Utilities Generating Company began operating the State's first lignite-fueled power plant, the Trinidad, in Henderson County. The Trinidad plant generated electricity from lignite until converting to natural gas in the early 1940's. The Aluminum Corporation of America has been using lignite since 1954 to generate electricity for its smelter at Rockdale.

The period from the mid-1960's to the mid-1970's was a pivotal time in the development of lignite in Texas. When rising natural gas prices in the 1960's created serious concern about economical future sources of energy, the Texas Utilities Generating Company, the State's largest utility, turned to Texas lignite as a substitute. In 1971, the company had a large lignite surface mine, the Big Brown, in operation in Freemont County to supply its newly constructed Big Brown power plant. Both the mine and the plant demonstrated the feasibility of using Texas lignite on a large scale for electricity generation. Further impetus to develop Texas lignite came from the 1973-74 Arab oil embargo and the 1976 order from the Texas Railroad Commission, the State's energy regulatory agency, that limited the future use of natural gas as a boiler fuel. At the time, natural gas accounted for more than 85 percent of the electricity generated in Texas, while coal accounted for about 10 percent. With the opening of new mines to supply other new lignite-burning power plants, production rose from 11 million short tons in 1975 to 29 million short tons in 1980, and reached a record 54 million short tons in 1989. Virtually all of the coal produced in Texas is lignite; less than 1 percent is bituminous coal.

Early coal mining in Texas was mostly by underground methods, but current production is entirely from surface mines. Two-thirds of the mines have an annual output of more than 500,000 short tons each. In 1989, the Martin Lake and Monticello mines of the Texas Utilities Generating Company ranked as the 8th and 9th largest U.S. coal mines, respectively, producing 12 to 13 million short tons each. Miner productivity in 1989 at all Texas coal mines averaged 7 short tons per hour, which was above the average of about 5 short tons per hour for all surface coal mines in the Interior Region.

Texas has been the Nation's leading coal consumer since 1981. In 1989, Texas lignite accounted for about 60 percent of the 91 million short tons of coal consumed in the State. Most of the balance was subbituminous coal from Wyoming. Electric power plants were by far the leading markets for coal in Texas, consuming 87 million short tons. The rest of the coal was consumed mostly in manufacturing activated carbon, cement, and lime, and for generating electricity for aluminum production. A small amount of channel coal was exported. Coke production for the State's iron and steel industry ended in 1987.

Texas is the leading State in coal-fired generation. The 16 coal-fired power plants in Texas had a total net summer electricity generating capability of 18,433 megawatts at the beginning of 1990. Although this was less than one-third of the State's total generating capability (gas accounted for nearly two-thirds), coal was used to generate 119 billion kilowatthours in



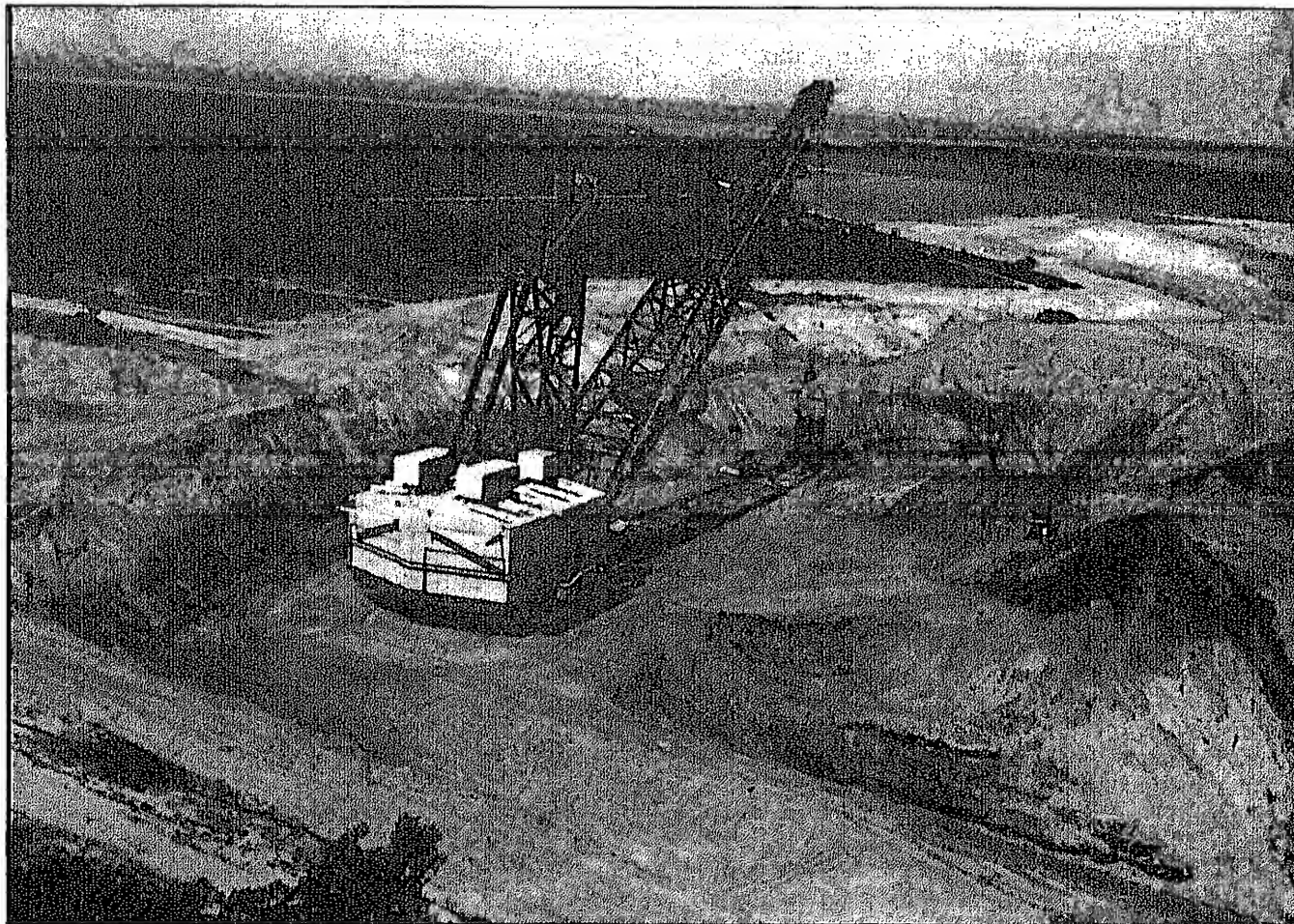
1989, about 51 percent of the total electricity generated. Nearly half of the coal-fired generation was from Texas lignite. Since 1980, coal's share of total electricity generation in Texas has nearly doubled, while the share held by natural gas has declined by more than one-fourth. The State's largest coal-fired power plant is the 2,335 megawatt W.A. Parish Plant, which is operated in Fort Bend County by the Houston Lighting and Power Company, using Wyoming subbituminous coal. The second-largest coal-fired power plant is the 2,250 megawatt Martin Lake Plant, operated in Rusk County by the Texas Utilities Generating Company and supplied by a nearby lignite mine.

Coal production in Texas is projected to rise to about 59 million short tons in 1992, with part of the increase supplying lignite for new generating units under construction. Although the State's lignite deposits are expected to be developed primarily as utility fuel, they are potential sources of chemical feedstock for the large petrochemical industry already established along the Gulf Coast. The channel coal in Webb County is another potential feedstock for petrochemicals. Underground gasification has also been considered as a technique for recovering the energy and chemical content of

lignite deposits too deep to mine economically with conventional methods.

### References:

Energy Information Administration, *Coal Production* (various issues); *Quarterly Coal Report* (various issues); *Coal Distribution January-December 1990* (April 1991); *Cost and Quality of Fuels for Electric Utility Plants 1989* (July 1990); *Inventory of Power Plants in the United States 1989* (September 1990); *Electric Power Annual* (various issues); *Electric Power Monthly March 1991*; *State Energy Data Report: Consumption Estimates 1960-1988*. U.S. Department of the Interior, Bureau of Mines, *State Minerals Summaries 1991*. The University of Texas at Austin: Publication No. 4301, *Texas Mineral Resources* (1943); Bureau of Economic Geology--Report of Investigations No. 43, *Mineral Resources of South Texas* (1962); Report of Investigations No. 50, *Lignites of the Texas Gulf Coastal Plain* (1963); Handbook 4, *Bituminous Coal in Texas* (1974); Lyndon B. Johnson School of Public Affairs, *Public Policies Affecting Lignite Development in Texas* (1977). 1989 *Keystone Coal Industry Manual*, Maclean Hunter Publishing Co. (Chicago, IL). *Lignite: Texas Energy for Texans*. The Texas Utilities Company System (no date).



*A dragline starting a new cut at the Jewett lignite mine in Hopkins County, Texas.*



## Methodology

### Weekly Data

Weekly coal production estimates are based on weekly carload data collected by the Association of American Railroads (AAR) from its member railroads and other cooperating railroads. EIA calculates the average tonnage per carload for each railroad's coal car fleet from information obtained from the most recent Quarterly Freight Commodity Statistics filed by Class I Railroads with the Interstate Commerce Commission (ICC) and from data made available by individual railroads. These average tonnages per carload are then multiplied by the number of cars loaded to obtain an estimate of weekly coal production shipped by AAR railroads.

Next, the weekly coal production estimate for a specific week is obtained by dividing the AAR rail tonnage for the week by a factor representing the proportion of quarterly AAR rail shipments to total quarterly coal production for the same quarter of the previous year in order to reflect seasonal variation. The ratio of rail tonnage to total production is occasionally adjusted to take into consideration current rail or coal strikes.

Once the U.S. weekly coal production estimate is determined, it is split into two subtotals - a portion for States with little or no rail coal shipments, and a portion for the remaining States, in which a significant percentage of production is shipped by rail. The States with little or no railroad coal shipments are Alaska, Arizona, Arkansas, California, Georgia, Iowa, Kansas, Louisiana, Missouri, Texas, and Washington. With the exception of California and Louisiana, the weekly production estimate for each "nonrail State" is estimated by multiplying the U.S. weekly coal production estimate by the ratio of projected production for that State to total U.S. projected production, for the current quarter. The methodology used to project State coal production is given in the EIA publication *Model Documentation of the Short-Term Coal Analysis System* (DOE/EIA-0394). The EIA contacts the producers in California and Louisiana to obtain their production estimates.

Production estimates for the "rail States" are based on the weekly railroad tonnage data for railroads shipping coal from those States, data supplied by these railroads on the percentages of their coal shipments originating from these States, and estimates made by the EIA concerning the amount of State production tonnage that is shipped on these railroads. These figures are used to compute weekly coal production estimates for these "rail States." These independent estimates are then proportionately adjusted to insure that the total production estimate for these "rail States" equals the U.S. total weekly coal production estimate minus the production estimated for all of the "nonrail States." Separate

production estimates are made for the anthracite and bituminous coal regions in Pennsylvania, eastern and western Kentucky, and northern and southern West Virginia.

### Monthly Data

Preliminary estimates of monthly coal production by State are obtained by summing weekly coal production estimates published in the *Weekly Coal Production* report. If a week extends into a new month, the production is allocated by day, and the days are added to the month in which they occur. For weeks without holidays, the allocation is Monday through Friday, 18.4 percent each day; Saturday, 8 percent; and Sunday, 0 percent. For weeks with a holiday occurring on a day other than Sunday, the allocation is Sunday and the holiday, 0 percent; and any other day, 20 percent.

Preliminary weekly and monthly production estimates are revised quarterly when quarterly production data, become available. Preliminary weekly and monthly estimates are proportionately adjusted to conform to the quarterly production figure.

### Quarterly Data

Estimates of quarterly coal production are based on data collected quarterly on Form EIA-6, with certain adjustments. The national estimate of quarterly coal production is set equal to the quarterly U.S. coal production total as reported on the Form EIA-6. Based on 1988 and 1989 data, the coal production estimation error for a quarter at the national level (i.e., the difference between the sum of the weekly estimates for a quarter and the quarterly EIA-6 preliminary data) ranges from 1 percent to 4 percent for 1988 and 1 percent to 2 percent for 1989.

The quarterly production data, although published throughout the year, are considered preliminary until EIA annual production data are finalized in September of the following year. At that time quarterly production data are revised (proportionately adjusted) to conform to the final annual production figures.

### Finalizing Annual Production

Preliminary total annual U.S. coal production, as reported in the *Weekly Coal Production* report in the first week in January of the following year, is the sum of revised monthly/quarterly estimates of production for the first 9 months (first three quarters) and a preliminary estimate of fourth quarter production derived from weekly estimates.

When production data for the fourth quarter of the year become available from Form EIA-6 in March of the following year, the preliminary fourth-quarter U.S. total production figure and corresponding State-level figures may or may not be revised, depending on the size of the difference between the estimates and fourth-quarter data. As a general practice, EIA does not revise the initial annual production estimates (determined initially in January of the following year). Weekly, monthly, and quarterly State and national production data are adjusted to

conform to finalized annual production figures derived from Form EIA-7A, in September of the following year.

Based on 1988 and 1989 data, the revision error for a quarter at the national level (i.e., the difference between the EIA-6 preliminary data and the EIA-7A final data) ranges from 0.02 percent to 0.08 percent for 1988 and 0.09 percent to 0.14 percent for 1989.



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Petroleum Marketing Monthly, updated on the 20th of the month

Natural Gas Monthly, updated on the 20th of the month

Weekly Coal Production, updated on Fridays at 5:00 p.m.

Quarterly Coal Report, updated 60 days after the end of the quarter

Electric Power Monthly, updated on the 1st of the month

Monthly Energy Review, updated the last week of the month

Short Term Energy Outlook, updated 60 days after the end of the quarter.